MCG Today

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NEW INSIGHTS INTO OLD AGE

Opportunities have blossomed for Wes Wilkins as he has grown older. Now that he has retired, he can get-up-and-go whenever he pleases. Mr. Wilkins plans to live to age 108 — and he plans to enjoy every minute of it.

For Jesse Stone, aging has withered dreams. She once wrote poetry, taught school and raised three children. Now, as a victim of Alzheimer's disease, she sometimes can't even remember her childrens' names.

Specialists at the Medical College of Georgia want to be sure that people such as Wes Wilkins maintain independent and fulfilling lifestyles — and they're working to eradicate diseases affecting people such as Jesse Stone. Researchers are studying the diseases, problems and issues, while clinicians are treating them. And students are learning, through coursework and clinical experiences, to be better health care professionals for the elderly.

Meanwhile, the need for such research, training and care continues to grow. By the year 2,000, more than 36 million Americans will be over age 65, up from 26 million in 1980. In Georgia, the 75-and-older age group is doubling at twice the rate of the population younger than age 60.

This issue of MCG *Today* takes a close look at the numbers and their implications. It delves into the special needs of the elderly, some of the programs the Medical College of Georgia offers for this age group around the state and the research under way to benefit this growing population.

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The Medical College of Georgia is the health sciences university of the University System of Georgia. Focusing on health care education, research and patient care, the Augusta-based institution consists of MCG Hospital, more than 80 support clinics, statewide outreach programs and the Schools of Allied Health Sciences, Dentistry, Graduate Studies, Medicine and Nursing.

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CONTENTS

Playing the numbers game 2

Training health care professionals in geriatrics is one of the many challenges the nation will face as more and more Americans live into their 70s and beyond. MCG is preparing health care professionals for the future by including geriatrics in courses throughout its curriculum.

Those darn wrinkles 5

Wrinkles are just one of the symptoms. Millions of Americans are finding that their vision, hearing and memory aren't as good as they used to be. MCG experts describe these and other physiological changes that come with age.

Growing old: a time of broken dreams and dreams come true 8

Retirement didn't turn out as John and Nellie Weatherford had hoped, but they're happy despite the obstacles. For many, growing old is a time of great satisfaction. But for some, it's a time of great distress.

Savoring independence 10

Wes Wilkins and his sister Polly Iwasko cherish their health and independence. MCG's Ambulatory Geriatric Care Program helps them to keep both.

Losing control 14

Jessie Stone once raised three children, taught school and played piano. Today she forgets who she is and needs constant supervision. Researchers are trying to understand Alzheimer's, the disease that has robbed her of her intellectual and physical abilities.

Reaching out to Georgia's elderly 18

Wilmer Thumma, 93, is just one of many in Georgia who benefit from — and contribute to — the success of MCG programs for senior citizens around the state.

A home for war heroes 22

William Long can tell stories about three wars, but today his memories take him back to 1910 when he was a young man in love. He is one of the 177 Georgia veterans now living at the Georgia War Veterans Nursing Home operated by MCG.

Research update 25

Researchers at MCG are searching for new insights into the problems that plague the old.

MCG in the News:

R. Edward Howell 30

MCG Hospital and Clinics get a new executive director.

Dr. Gary M. Whitford 31

MCG's expert on fluoride metabolism receives an international honor.

Playing the numbers game

by John Donnelly

America's elderly are playing a numbers game.

They are playing it with themselves, demographers, federal agencies, hospitals and other health care providers.

Sometimes they dictate the rules, and sometimes they are forced to play by the rules of others. The overriding fact is that the rules are new — because no game has been played with numbers this large before.

The Social Security Administration has estimated that by the year 2000 more than 36 million Americans will be older than 65. That's an increase of 10 million since 1980. Within this group is the fastest growing segment of the American population — those over 85. This group will double in number by the year 2000.

This increase in the elderly population will mean a corresponding increase in the demand for health care.

The Report on Education and Training in Geriatrics and Gerontology put out by the National Institute on Aging estimated that the elderly would visit physicians about 230 million times a year by the end of the century. That would be an increase of about 40 percent over the 165 million visits made in 1980.

To meet the demand, almost everyone working in the health professions and related fields will require some knowledge of aging and how to work with the elderly. Today, however, few health professionals are adequately prepared to care for this emerging population, the report said.

Between 17,600 and 30,306 primary care, academic and consultative geriatricians will be needed to care for the over-65 age group by the year 2010. To meet these manpower needs, medical education must recognize the needs in the field of geriatric health care. "In 1976, only two of the country's 125 medical schools required students to take courses in either geriatrics or gerontology, and only 15 schools held seminars of brought in speakers on geriatrics," according to a recent article in the *New York Times Magazine*.

While the situation is improving, the article reported that in 1984 "clinical programs did not exist in 35 percent of departments of internal medicine, 41 percent of departments of family medicine and 50 percent of departments of psychiatry. Furthermore, only slightly more than 2 percent of third- and fourth-year medical students were enrolled in geriatrics courses."

At MCG, a concerted effort has been under way for the last several years to include geriatrics in the curriculum. Some courses are tailored specifically to geriatric medicine and care, while many classes incorporate geriatrics into their other coursework.

The reason for including geriatrics in other coursework is particularly evident in dentistry, where a 30-year-old patient may have the mouth of a 60-year-old due to disease or some other factor. "You're often dealing with a condition rather than an age," said Dr. Wallace Edwards, associate dean for academic affairs in MCG's School of Dentistry. Community dentistry, oral surgery, periodontics, dentures, restorative dentistry and oral medicine courses are among those that address the needs of the elderly, he said.

Funded by a major federal grant, the MCG School of Medicine developed a curriculum several years ago that integrates geriatrics into existing courses throughout the four years of medical school. Among the disciplines that incorporate geriatrics are internal medicine, family medicine, the neurosciences, neurology and psychiatry and health behavior, said Dr. Terrence Kuske, associate dean for curriculum in the medical school. "Geriatrics reaches all specialties so we felt we needed to reinforce it throughout the four years," he said.

MCG's School of Allied Health Sciences — which has a task force that coordinates allied health programs on geriatrics — includes geriatrics in courses in associated dental sciences, occupational, physical and respiratory therapy, and in the physician assistant program. In addition, plans are being developed to offer a geriatrics clinic that would give allied health students hands-on experience treating the elderly, said Dr. Virginia Allen, chairman of the geriatrics task force.

The School of Nursing has implemented an undergraduate curriculum that examines development across the life span, with emphasis on the elderly. It also has begun an elective on geriatrics open to everyone at the Medical College. And plans are in the works for more programs. If funded, a grant request submitted to the federal Division of Nursing will allow the nursing school to offer a three-year series of workshops designed to bring practicing and academic nurses up-to-date in geriatrics. Another grant, to be submitted by the Schools of Graduate Studies and Nursing, will seek funds to start a gerontological track in the graduate program. This would allow students to emphasize geriatrics in their clinical work, said Dr. Gloria M. Clayton, associate dean for undergraduate programs in the nursing school.

Finances enter the numbers game in another way.

Health services cost money, money that a significant portion of the elderly does not have. Nationally, almost 15 percent of those over 65 live below the poverty level. In some states, more than a third of the elderly are in this category. Finding a way to finance the cost of health care for these and other elderly Americans is a difficult and multifaceted problem.

The Health Care Financing Administration has projected that nursing home care, which cost $16 billion in 1978, will cost $176 billion by 1990. The expenditure for physicians' services will increase from $35 billion to $129 billion, and hospital care will rise from $76 billion to $335 billion, over the same period. Nearly all of the nursing home patients will come from the over-65 segment of the population and, with a rising elderly population, this group also will account for more and more of the other services' totals.

Three generations of players in the numbers game: Jackie Conley, 33; her mother, Eloise Conley, 51; and her grandmother, Eva Jenkins, 64. ▶

The Medicare and Medicaid programs, instituted in 1965, are the backbone of the federal government's efforts to help the elderly defray these costs. Medicare is the federal health care insurance program for the 65-and-over age group. It helps pay for physicians' services, hospitalizations, nursing home stays and associated costs. Medicaid is a federal-state program in which the states determine eligibility and health care services covered, while the federal government reimburses the states for a portion of their expenditures.

Critics charge that these programs do not address many of the elderly's needs such as home health care and home- and community-based services for the elderly poor.

Even those who benefit from the Medicare and Medicaid programs are facing an increasingly uncertain future.

In the early 1980s many observers speculated that the Medicare system was going broke. To prevent this from happening, Congress passed legislation in 1982 authorizing the prospective payment, or Diagnosis Related Groups (DRG), reimbursement system. Under this system, the government pays hospitals in advance for treating Medicare patients. Patients with similar illnesses who require similar treatments are placed in one of 467 categories, called DRGs, and hospitals are paid a predetermined amount for each patient admitted in a particular DRG. If the patient leaves the hospital early, the hospital keeps the difference between the cost of treating the patient and the DRG reimbursement. If the patient must stay in the hospital past the allotted time, then the hospital has to absorb the additional costs.

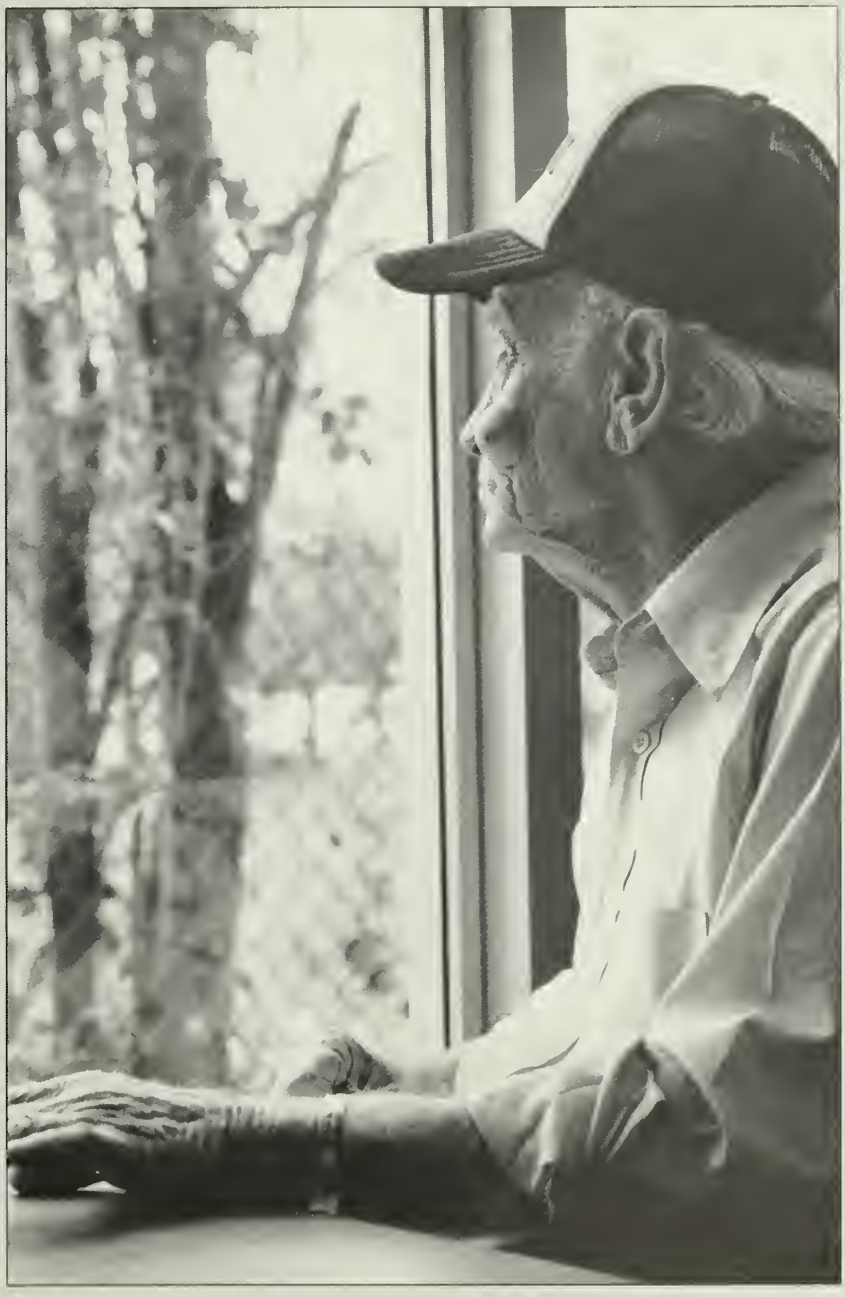
Using a computer model to study the effect of DRGs on hospitals, the Congressional Budget Office reported in 1985 that small hospitals and large teaching hospitals would gain the most from DRGs. In addition, the report said, hospitals in the Northeast and South would gain overall, while hospitals with many low income patients would do worse.

Under the DRG system, MCG Hospital was able to recover the costs of providing services to Medicare beneficiaries in fiscal 1985, said Tom Kelly, assistant hospital administrator. "It appears we will be able to do the same this fiscal year. With current changes in the prospective payment system, however, we will not be able to recover these costs in the future unless further changes to the system are made."

Another issue of special concern to the elderly and those who treat them is the Gramm-Rudman-Hollings Act. Across-the-board federal budget cuts mandated by the legislation will mean a reduction in Medicare, Medicaid and other federally-funded programs aimed at the elderly. Dr. T. Franklin Williams, director of the National Institute on Aging, said earlier this year that cuts resulting from Gramm-Rudman-Hollings would halt some research on Alzheimer's disease. A $500,000 reduction in the $10.4 million appropriation for Alzheimer's research was anticipated.

While solutions to these and related issues are being pondered, while funding sources for the elderly are being sought and while health care education tackles new curricula and training courses in geriatrics, the elderly population continues to grow. How the issues of geriatric care are resolved, not in the distant future but in the next few years, will be a matter of overriding importance for all. ■

Strain on nursing homes and other health care resources will continue to grow as the nation's elderly population swells.



Those darn wrinkles

by Carol Daly

The symptoms appear gradually.

Reading becomes more difficult. Sounds don't seem to be quite as sharp. The appetite isn't what it used to be.

Once running up a flight of stairs was invigorating; now it's exhausting just to walk.

Remembering things seems a bit more difficult too. It may be no problem to recall events that happened 25 years ago, but remembering to turn off the burner on the stove or to take medication isn't so easy.

The diagnosis has become increasingly common. Millions of Americans are getting older.

(Above) Joe Dodd, 72: grappling with the changes that come with age.

The nation's older population has grown dramatically in recent decades, increasing far more rapidly than the rest of the population for most of this century. Life expectancy has been increased in part because of advances in medicine.

For many in this growing population, the most obvious and sometimes most troubling changes that will occur with age will be cosmetic.

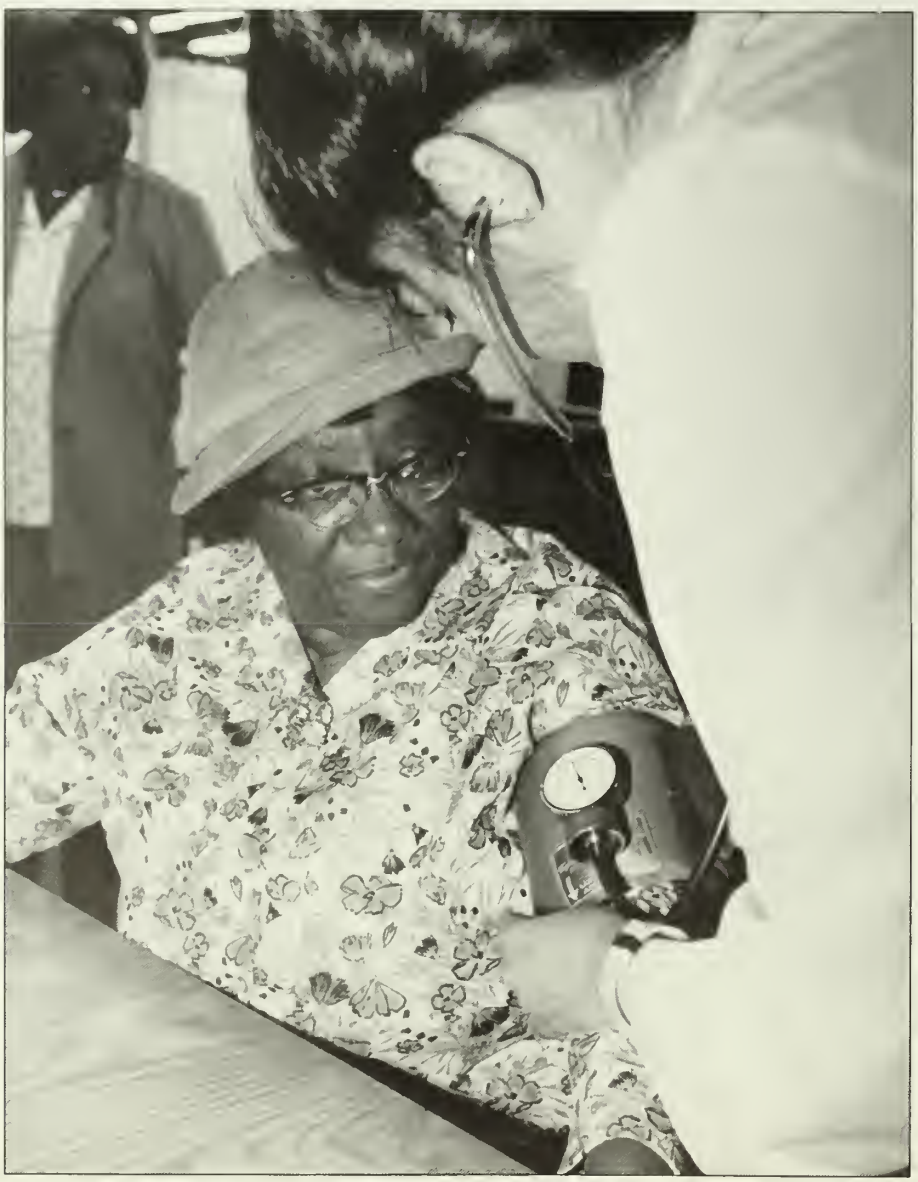
Often the first sign is the appearance of gray hairs. Like many of the effects of aging, different people turn gray at different rates.

Wrinkles and sagging skin, caused partly by exposure to sun, are another sign. A younger person's skin repairs damage from ultraviolet sun rays rather quickly. Over the years, however, excessive exposure to sun permanently damages the skin giving it a parched, wrinkled look.

Wrinkles occur for several reasons, said Dr. Kenna Given, chief of the section of plastic surgery in MCG's Department of Surgery. Creases form as fibers in the skin lose their elasticity. In addition, the force of gravity stretches the skin downward, causing it to droop.

"If (exposure to) the sun hasn't been excessive, the signs of aging will start developing between (ages) 40 and 45, but you can see the signs at 30 if you really want to look hard for them," Dr. Given said.

A 1982 study showed that one in five elderly individuals 65 or older has some disability, but only a small proportion is severely disabled. The leading chronic health problems are arthritis, hypertension, hearing, heart conditions, orthopedic conditions, sinusitis, visual impairment, diabetes, varicose veins and arteriosclerosis.



High blood pressure is one of the leading chronic health problems among the elderly. Here, Mary Black has her blood pressure taken by Sylvia Pierson, a student at MCG.

Often vision is diminished. At about age 40, the eyes gradually lose the ability to focus on near objects, said Dr. Mike Makowski, a resident in MCG's ophthalmology clinic. The lenses in the eyes become less pliable with age and cannot change shape as rapidly as they once did. The change often precipitates the need for glasses for the first time in a person's life.

Serious eye conditions also occur more often in old age. One of the most familiar is glaucoma, a disease marked by increased pressure within the eyeball that can result in damage to the optic disk and loss of vision. Cataracts — cloudy eye lenses — also appear more often in the elderly.

Hearing loss is another problem.

Usually high frequency sounds are the most difficult to hear, and speech sounds such as 's,' 'th,' 'f' and 'sh' become hard to understand, said Dr. Albert R. DeChicchis, coordinator of the audiology service at MCG and the Veterans Administration Medical Center.

This may lead to other changes as well.

People with hearing loss may become tired of saying "huh?" and "what?" and voluntarily isolate themselves. Because they feel frustrated, they may withdraw from social gatherings — a move that can have much greater implications in terms of mental and physical health, Dr. DeChicchis said.

Those with normal hearing don't always understand the problems and tend to shout when they speak. But, said Dr. DeChicchis, "Many times shouting makes it worse. It's better to get closer and speak clearly at a moderately raised intensity."

Bones and joints also may degenerate.

Osteoporosis, a disease marked by loss of bone mass, weakens the bones so they fracture more easily. The disease has become a major health problem simply because more people are living longer, said Dr. Nazir A. Bhatti, chief of the hand and back section of the orthopedic section of MCG's Department of Surgery.

In children, bones form at a faster

Diminished vision and serious eye conditions often plague the elderly. Here, Dr. Richard Melcher examines Gwen Nasworthy.

rate than they are absorbed. But by about age 40, bone absorption occurs more rapidly than bone formation. Peak bone mass is influenced by physical activity, calcium intake, hormones and the stress of weight bearing.

Theoretically, osteoporosis can be avoided through exercise and a proper diet containing a full complement of calcium beginning in childhood. Absorption can be slowed in later life through a balanced diet supplemented with calcium and exercise. Inactivity greatly increases the chances of getting osteoporosis, Dr. Bhatti said.

Joints also wear out with age.

Often the hips, knees, wrists, ankles, hands and the lumbar region of the spine are affected, sometimes causing crippling conditions. Methods have been developed in recent years, however, to replace certain joints, such as the knee and hip joints.

Research has shown how such changes occur, but no one knows why people age and die. There are many theories though.

One has to do with free radicals. Radicals are groups of atoms that are passed from one molecule to another. Free radicals are those groups in the process of exchange. Researchers hypothesize that free radicals combine with body tissue to alter the tissue membrane and impair tissue function. If that is true, then stifling the damaging effects of free radicals may increase life expectancy.

Another theory suggests that the immune system becomes altered and turns on itself. Proponents of this theory hold that some of the body's defenses lose the ability to discriminate between outside germs and the body's own cells. Then they may fail to fight off harmful organisms, or they may do battle with the body's own cells, mistaking them for outsiders.

Although the key to aging has not yet been found, scientists do agree that proper nutrition and exercise — and abstaining from smoking and drinking — make a significant difference in the quality of a person's later years, said Dr. Richard E. Melcher, assistant professor of family medicine at MCG. "Aging is subtle, it just depends on whether you want to accelerate it. Taking care of yourself can favorably affect your potential." ■

GROWING OLD

A time of broken dreams and dreams come true

by Carol Daly

John and Nellie Weatherford looked forward to retirement — more time to spend at their place at Clarks Hill Lake, more time with the family.

Mr. Weatherford had worked nearly 40 years at the Clearwater Finishing Plant in Clearwater, S.C., and his wife had put in more than 20 years at the Graniteville Co.

When Mr. Weatherford, 69, retired a few years ago, he hoped he would be able to spend more time camping and fishing. Before retirement, outings were always confined to his days off.

But things didn't work out that way.

Mrs. Weatherford's mother, who is bedridden, needed constant care, care that Mrs. Weatherford, 64, and her sister provided. For the last six years, they've taken turns staying the night with her and preparing her meals. Going away for a few days meant hiring a nurse.

It wasn't long before the Weatherfords discovered they only had time to go to their lake home to do the yard work. Renting out their lake home seemed a good temporary solution. But renting became too much of a problem so they sold the property — and a part of their dream for retirement.

The Langley, S.C., couple, like many of the nation's elderly, have faced hardships and disappointments as they've grown older. Their health isn't as good as it once was. They don't have the energy they once had. And they aren't doing all they had dreamed of doing.

But they have learned to live with their changing lives; they have learned to take the ups and downs of aging in stride. Many people don't.

"It can be a time of great satisfaction or of significant distress," said Dr. Kim Oppenheimer, MCG's director of psychological services for the Student Health Center. Dr. Oppenheimer previously worked with the elderly at the Center for the Study of Psychotherapy and Aging at the Veterans Administration Medical Center in Palo Alto, Calif.

Old age also can be a time of ambivalence, she said. "On one hand, it's a time people look forward to, but there are also a lot of changes that require adjustment."

Communication and socializing become more difficult as hearing and sight diminish. Physical problems become more common. And people find they just don't feel well or feel capable of doing the things they once did.

Emotional and mental difficulties also arise.

Many people feel lonely. Children have moved away, and spouses may have died. Some feel they have lost their purpose in life. And retirees often lose the self-esteem they once gained from their jobs.

"Retirement can be a major stress," said Dr. Samuel D. Thielman, director of the section of geriatric psychiatry and assistant professor of psychiatry at MCG. "It can produce all sorts of unexpected problems because people are not prepared for the free time, the lack of gratification."

Though they may be in good health, many people begin to fear illness as they see their friends and neighbors become ill.

Despair is common too, especially when people realize they haven't attained their lifelong goals. And new fears accompany old age, particularly among those people who have become isolated.

Dysphoria — dissatisfaction and sadness — is more common among the elderly than their younger counterparts. But major depression — in which a person loses interest, can't sleep, doesn't eat or feels hopeless — occurs at about the same frequency, Dr. Thielman said.

For some people, fear of the loss of memory capacity, called dementia, is the most frightening consequence of aging. It is more feared in the older age group because it is more common. Ten percent to 15 percent of the elderly have some form of memory impairment, and about 5 percent have severe memory impairment.

About 40 percent of the dementia cases of late life are caused by Alzheimer's disease. Other causes are nutritional deficiencies, thyroid problems and strokes.

"That's why it's so important for people who have memory problems to receive a proper evaluation," Dr. Thielman said. "In a significant number of cases there are things that we can treat. If we can't reverse the dementia, and frequently you can't reverse what's already been done, you can at least arrest the course in certain cases."

Despite the physical problems, emotional stresses and financial hardships, older people have fewer mental problems than the general population, Dr. Thielman said.

And contrary to popular belief, personalities do not change substantially in healthy elderly individuals.

"Older people do not tend to become crankier or more religious," Dr. Thielman said. "If you were a trouble-maker at 20, you're going to be that way when you're 80. There really is not much evidence of major changes in a person's basic personality traits."

Personality changes that do occur in late life often are indicators of physical or mental disease, he said.

Early this year, MCG established a geriatric psychiatry clinic designed to meet the needs of people with mental disorders of late life, such as dementia, depression, anxiety disorders and problems with bereavement. Some people have come in with their families for pro-

John and Nellie Weatherford discuss the ups and downs of retirement.

fessional advice on whether they should enter nursing homes. Others have been brought in for assessments, or to have their medicines straightened out.

"It's not unusual for people to be on a host of medicines. We get a lot of people coming through who just need to be taken off certain drugs or to be put on the right drugs. It's very common for a patient's main problem to be related to a medication side effect," Dr. Thielman said.

The newly established clinic calls on the resources of other departments at MCG, such as neurology, internal medicine and family medicine, to provide complete medical care to its aging patients.

"There's a saying in geriatrics that one is none. If you just have one medical specialty involved you are not going to be able to do an adequate job. So we're trying to involve as many people as we can because of the very complicated nature of the problems of the elderly," Dr. Thielman said. ■

Savoring independence

by Catherine Boardman

If 63-year-old Wes Wilkins of Augusta decides he wants to have breakfast in Columbia, S.C., then he's off.

Mr. Wilkins lives with his 67-year-old sister, Polly Iwasko, and if she wants to join him, she's more than welcome.

"Of course, that's not a routine thing but nothing is out of the question as far as our activities are concerned. We just like to play it by ear," Mr. Wilkins said.

Mr. Wilkins, a retired maintenance engineer, enjoys playing the organ, fishing and tinkering in general, he said, pointing to a large tool shed in his back yard.

Ms. Iwasko retired two years ago from a career as an executive secretary. She spends a typical day cross-stitching, baking and reading. "My favorite author is Agatha Christie because she makes you think," Ms. Iwasko said.

Redecorating their home is an ongoing project and traveling is always on their minds. Last year Ms. Iwasko and Mr. Wilkins visited family in Michigan. This year they've traveled to the EPCOT Center in Orlando, Fla., and hope to visit the Smithsonian Institute in Washington, D.C.

Ms. Iwasko and Mr. Wilkins face life with the eagerness and enthusiasm of teen-agers. "As you get older, you learn your limitations and enjoy life around them," Ms. Iwasko said.

Ninety percent of America's elderly population are like Ms. Iwasko and Mr. Wilkins — active and on-the-go. "Up, out and about" is the way the team of health care providers at the Medical College of Georgia's Ambulatory Geriatric Care Program likes to describe its elderly patients. The program is offered by the Department of Family Medicine.

"There's a common misconception by many people that a significant percentage of the elderly population is in nursing homes and hospitals. That simply is not the case," said Joseph W. Tollison, chairman of MCG's Department of Family Medicine.

However, most of the elderly population is seen regularly by physicians for evaluation and treatment of a variety of chronic conditions. Many suffer from a combination of diseases. "Family physicians see approximately 40 percent of these elderly for their office visits," Dr. Tollison said.

To meet increasing demands for geriatric care, MCG's Family Practice Center recently formalized the program of care it has provided for 15 years. Opened in the fall of 1985, the Ambulatory Geriatric Care Program is a commitment to meet the health care needs of today's fastest-growing generation.

Mr. Wilkins has given his goal of living to age 108 to Dr. Richard E. Melcher, medical director for the Ambulatory Geriatric Care Program. "Dr. Melcher's responsibility is to help me get there and he knows it," Mr. Wilkins said.

A comprehensive program for delivering geriatric health care and an emphasis on preventive health care are the tools Dr. Melcher and others will employ in helping Mr. Wilkins and the program's 2,000 elderly patients continue their active lifestyles.

"Geriatric patients cannot be treated in a vacuum. Treatment for one disease can have distinct ramifications on other diseases. Geriatric medicine is not just treating old adults — the elderly have unique diseases and needs," Dr. Melcher said, adding that the new program at MCG is designed to meet those special needs.

Many elderly individuals do not get around with the ease of younger years, making convenience a must. Located in the Family Practice Center, the Ambulatory Geriatric Care Program offers a wide range of services in one building. These include limited outpatient minor surgery and routine X-rays.

The facility also has a fully accredited laboratory and equipment to screen for and diagnose certain medical problems that affect the elderly.

For instance, a flexible sigmoidoscope allows physicians to routinely screen for diseases of the lower colon. "This is particularly important for the elderly since they are more susceptible to cancerous polyps and colitis (inflammation of the large intestine)," Dr. Melcher said. With the instrument, the last 60 centimeters of the intestinal tract can be viewed.

Instruments to detect hearing loss and screen for eye diseases also are at the facility.

Older patients often have difficulty climbing onto standard examining tables. Special tables that mechanically lower to the floor alleviate such problems.

Care of MCG's elderly patients extends beyond convenience and special equipment. Hilda Delionbach, a registered nurse, enjoys the rapport she has with her patients and feels like a daughter to those she has known for years.

"The elderly may need a little more special care or attention, like holding their arm while walking down the hall. But I enjoy working with them on a nurse-to-patient relationship. I try to be understanding and compassionate because hopefully I'll live long enough to be in their shoes one day," she said.

To ensure continuity of care, patients

◀ *Wes Wilkins at age 1 year 4 days with his sister Polly Wilkins Iwasko, 5 years 5 months.*

are assigned to one physician. However, the Ambulatory Geriatric Care Program has other professionals on staff in its effort to meet the elderly patient's every need.

The potential for drug interactions is extremely high in the elderly and some cannot tolerate normal adult dosages. A doctor of pharmacy with a degree in clinical pharmacology helps doctors avoid adverse reactions caused by multiple medications.

Most elderly people live on fixed incomes and some have trouble affording needed medications. A social worker is there to help.

Emotional problems, such as depression, often emerge as a person ages. A psychologist is on staff to evaluate patients and help them overcome emotional problems and adjust to the effects of aging.

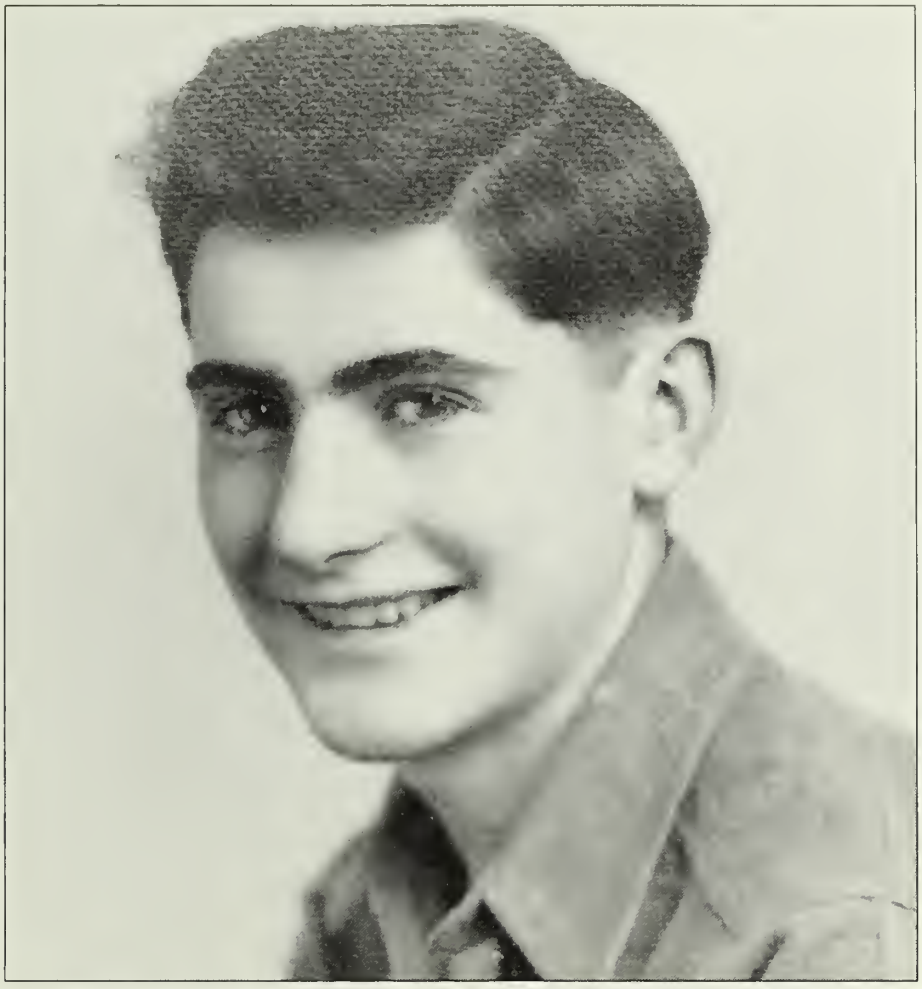
The proper diet is vital for an elderly person to stay healthy and energetic. The program hopes to add a full-time nutritionist to its list of health care professionals, but in the meantime, other MCG nutritionists help plan special diets and menus.

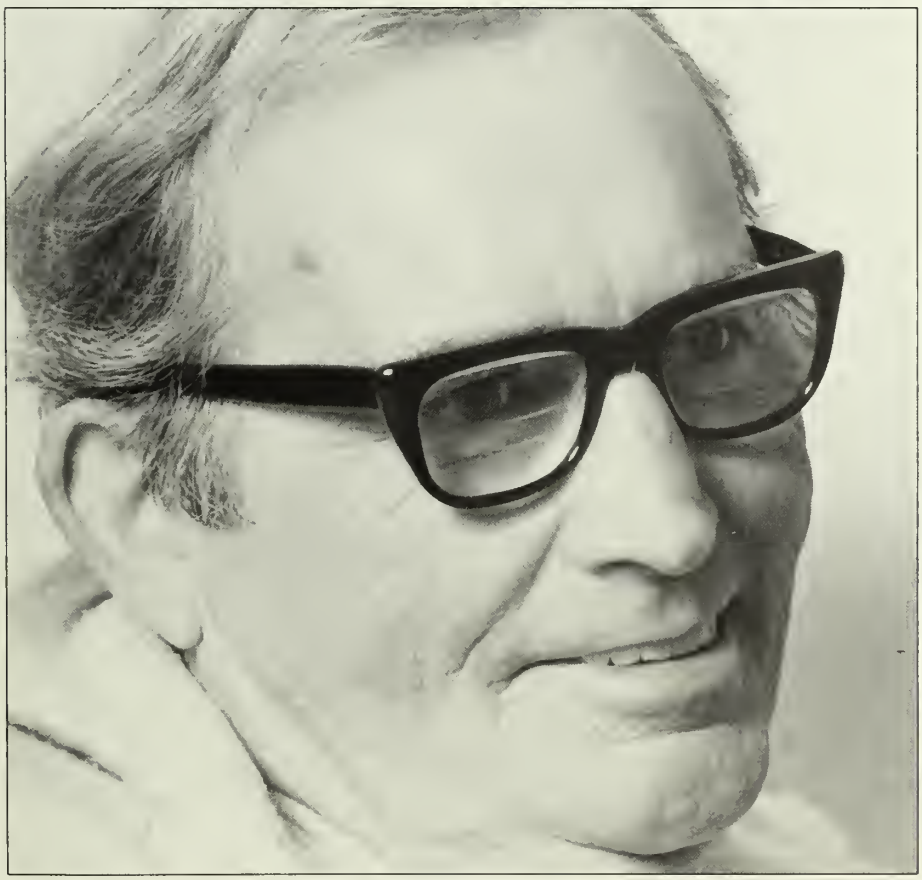
A patient educator develops outreach programs and seminars for the elderly. "As the program expands we hope to have the resources to extend this aspect and offer services such as home safety checks to our patients," said Dr. Max D. Miller, associate director for education and programs.

Dr. Miller also coordinates programs to keep physicians and staff up-to-date on the latest developments in ambulatory geriatric medicine. The Ambulatory Geriatric Care Distinguished Lecture Series recently brought Dr. Peter V. Rabins, nationally recognized expert on Alzheimer's disease and co-author of *The 36-Hour Day*, to the MCG campus.

Not only does MCG's Ambulatory Geriatric Care Program meet an increas-

Polly Wilkins Iwasko at age 22 (top) and today at 67.





ing need in providing health care to the elderly, it influences the future of geriatric medicine by training tomorrow's physicians.

"Students, who in the past were exposed to elderly patients almost exclusively as very ill inpatients with multiple problems and thick charts, now see them in a different light. They experience the importance of early diagnosis as well as the challenge of diagnosing atypical presentation of diseases that often occur in ambulatory geriatric patients," Dr. Tollison said.

Computer-assisted instructional materials on ambulatory geriatric medicine have been prepared for MCG students and residents. A handbook on outpatient geriatric medicine will be developed as well.

The primary responsibility of MCG's Ambulatory Geriatric Care Program is to provide effective and efficient medical care for the elderly patient, but it also provides a unique opportunity for research. "Our patient base gives us an excellent opportunity to research medical and other problems affecting the elderly," Dr. Miller said.

Projections indicate that by the year 2000, one in every five Americans will be 65 or older. "The medical community must respond to increasing demands for geriatric care. The Ambulatory Geriatric Care Program is a step in the right direction for the Medical College," Dr. Melcher said.

"Don't write the elderly off, they are fantastic people," Dr. Melcher said. The care providers at MCG's Ambulatory Geriatric Care Program see their patients as survivors, the best that were made in the early 1900s.

When Dr. Melcher sees a 25-year old driving a Corvette, he thinks "big deal." "But when I see an 82-year old driving down the road — now that's terrific," he said. ■

Wes Wilkins at age 17 (top) and today at 63.

LOSING CONTROL

by Catherine Boardman

For its victims, Alzheimer's disease destroys the lives they once had. For the victims families, it presents a struggle overwrought with fear, guilt and sadness.

Jessie Stone is one of Alzheimer's victims. She raised three children, taught Sunday school, played the piano and wrote poetry before she was afflicted with the disease.

Her daughter, Caroline Gambrell of Augusta, is another victim. She remembers her mother as a warm and giving person with a sharp and clever mind.

Today, at age 85, Mrs. Stone forgets where she is, who her daughter is and even who she herself is. Sometimes she curses. Other times she seems to be in another world.

Victims of Alzheimer's, a brain disorder, become forgetful and progressively lose their intellectual and physical abilities. The disease is not a normal consequence of aging. It afflicts about 2 percent of Americans over age 65 and 20 percent of those over 80, said Dr. Samuel D. Thielman, assistant professor of psychiatry and director of the section of geriatric psychiatry at the Medical College of Georgia. "It occurs in people younger than 65, but they are a distinct minority," he said.

The cause of Alzheimer's is unknown, though theories abound. Some researchers believe the disease is caused by an excessive accumulation of aluminum in the brain. Others believe it may be caused by a slow-acting virus, abnormal immune function or possibly a malformation of cellular filaments in the brain, Dr. Thielman said.

No cure exists and diagnosis must be made through exclusion of other illnesses.

The disease begins with bouts of forgetfulness. In Mrs. Stone's case, bills were ignored. The paper sat in the yard. Mail was left in the mailbox. The ringing phone went unanswered. Mrs. Stone became paranoid, and she couldn't sleep through the night because she thought she heard babies crying.

As victims become more forgetful, their personalities change. They become hostile, abusive and aggressive, Dr. Thielman said. "People who never cursed in their lives will start cursing at relatives and acting mean."

Mrs. Gambrell understands her mother's hostile and uninhibited behavior. "She has lost control over her life. When she becomes rebellious, it's as if she's saying, 'Gee, this is great, I'm in control.' I can't get mad at her," she said.

As time goes on, victims begin to have difficulty naming objects. For example, instead of saying chair, they'll say, "that thing you sit in," Dr. Thielman said. In later stages of the disease, victims are unable to complete sentences. In severe cases, they won't speak at all — they only grunt.

Three-and-a-half years have passed since Mrs. Stone first was diagnosed with Alzheimer's disease, technically called senile dementia of the Alzheimer type. She still speaks clearly but often mutters an unintelligible sequence of phrases to which Mrs. Gambrell smiles affectionately and responds, "That's right mother, we are having a wonderful day."

Memory of the distant past often is retained through the middle stages of the disease. Every now and then, Mrs. Stone will sing a few lines from songs of the 1920s, speak of old relatives or quote a stanza from one of her poems. "Sometimes I put her up to the piano and she'll play for a couple of minutes, but then it fades away," Mrs. Gambrell said.

Psychomotor skills, such as walking, are lost in the late stages of Alzheimer's disease. Victims become more susceptible to illness, and most die five to 10 years after diagnosis.

"However, if you look at the death

Mrs. Stone recalls a few notes on the piano. ▶

certificates of Alzheimer's victims, only 20 percent actually die from Alzheimer's. Most die from other diseases made worse by the fact that Alzheimer's victims cannot care for themselves," Dr. Thielman said.

At its onset, Alzheimer's is psychologically devastating for its victims, Dr. Thielman said. Denial is common, and victims usually resist going to a physician for evaluation, he said.

"There is also a high level of frustration. People tell (the victims) they are repeating themselves, but they can't remember enough to stop. It's a very eerie, weird type of experience that Alzheimer's patients describe," Dr. Thielman said.

The burden ultimately falls on relatives.

As victims become less aware of what's going on around them, they have to be supervised 24 hours a day. Time spent caring for a victim often leaves little or no time for spouses, children, jobs and other obligations.

"At some point families must come to terms with the reality of the situation and their own limitations. Nursing homes are usually the best answer even though most people hate the idea and feel guilty about putting a relative in one," Dr. Thielman said.

Mrs. Stone herself suggested moving to a nursing home after she lived with her daughter's family for two months. "We all rallied as a family to care for mother. My husband and daughters were very understanding with her even when she wandered out of the house in the wee hours of the night or pulled all of the clothes out of the drawers," Mrs. Gambrell said.

"One day she looked at me as if through a black cloud and said, 'This isn't going to work. You need to find a place for me,' " Mrs. Gambrell said.

Mrs. Gambrell found a nursing home five minutes from her home and worked out a compromise. She brings her mother home every afternoon for about five hours. Mrs. Gambrell finds activities to keep her mother stimulated. "At this point in my life, caring for my mother is what I do. But it's the least I can do — she's my mother. She took care of me for so many years," Mrs. Gambrell said. "Sharing a smile (with her) each day is my reward."

Researchers at the Medical College of Georgia are attempting to solve some of the mysteries of the disease that has so altered Mrs. Stone's personality.

Jesse Stone washes vegetables in her daughter's home.

Certain facts have been established. Autopsies of Alzheimer's victims show highly characteristic pathological changes in the upper level of the brain where reasoning, thinking and remembering take place. Formations of degenerating brain cells are found, along with nerve filaments that are wrapped around one another and a decline of certain cells, called cholinergic cells, that are important for memory processes.

In addition, acetylcholine, a neurotransmitter that is believed to be involved with memory, decreases significantly in Alzheimer's victims. Neurotransmitters are chemicals secreted in the brain by one nerve to stimulate or inhibit the next nerve.

"The search for a solution to Alzheimer's disease is hampered by uncertainties as to its mechanisms and the lack of a diagnostic test short of biop-

sy or autopsy," said Dr. Kimford J. Meador, assistant professor of neurology and director of the section of behavioral neurology at MCG.

Dr. Meador is conducting a study to better understand the underlying causes of Alzheimer's disease and possibly to find a useful diagnostic tool. The research also should advance current knowledge of neurochemical and electrophysiologic interaction in the memory process, he said.

Dr. Meador and Dr. David W. Loring, neuropsychologist at MCG, have determined that a measurement of the brain's activity called the P300, and the ability to learn, decrease when the production of acetylcholine is blocked. With that finding, the next step is to determine whether anticholinergic drugs, which block acetylcholine production, can alter P300 readings in Alzheimer's victims.

"We think this may be a way of looking at the internal state of a person's acetylcholine system. It would give researchers a window on the brain," Dr. Meador said.

Dr. William J. Jackson, associate professor of physiology at MCG, is administering cholinergic drugs, which stimulate acetylcholine production, to non-human primates in an attempt to improve memory capability.

In one group of young monkeys, acetylcholine deficits are created to determine if a relationship exists between memory and acetylcholine and to document that relationship if it does. In a second group of monkeys, all over 20 years of age, memory is measured by observing the monkeys' performances on a complex memory task. The study has been approved by MCG's Committee on Animal Assurance.

"There are several advantages to the use of animals in the search for help for Alzheimer's patients," Dr. Jackson said. "Since cholinergic drugs tend to be toxic, the effects of strong doses and unusual combinations of (the) drugs can be observed without endangering human life."

Dr. Jerry J. Buccafusco, associate professor of pharmacology and toxicology and psychiatry at MCG and director of neuropharmacological research at the Veterans Administration Medical Center, is searching for a drug that will reverse memory loss in Alzheimer's victims.

In his study, approved by the MCG Committee on Animal Assurance, Dr. Buccafusco is attempting to design a drug that will help remaining acetylcholine neurons release more of the important chemical.

"Some peptides (compounds composed of amino acids) are known to enhance memory," Dr. Bucccafusco said. If memory loss in experimental rats is reversed when peptides are administered, "the molecular structure of the effective peptide will be examined to understand its active components. Then we will try to come up with novel therapeutic treatments for Alzheimer's patients that could be used alone or with other treatments."

Another team of researchers at MCG is testing a drug that may prevent or slow memory loss in Alzheimer's victims. Dr. Richard L. Borison, associate professor of psychiatry and chief of neuropsychopharmacology at MCG and the Veterans Administration Medical Center, and Dr. Bruce I. Diamond, associate professor of psychiatry at MCG, are investigating a drug labeled PY 108-068.

PY 108-068, also being tested at six other medical centers in the country, is of a class of drugs called calcium channel blockers developed for therapeutic effects on the heart. The drug, however, has no effect on the heart at low doses but does improve blood flow to the brain.

In Alzheimer's victims, blood flow to the brain is markedly decreased. Drs. Borison and Diamond hope to determine whether increasing cerebral blood flow is the theraputic key to treating victims. "We hope to find that administering the drug to people in the early stages of Alzheimer's will impede further cognitive and memory loss, as well as prevent further progressive brain damage," Dr. Diamond said.

The drug is being tested in 16 patients at MCG. "PY 108-068 was safe and effective in increasing blood flow in animals. It would be a tremendous breakthrough if the drug proves beneficial to victims of Alzheimer's," Dr. Diamond said.

For Mrs. Gambrell, her mother and other victims, a breakthrough would change what they have been forced to accept as a fact of life. Mrs. Gambrell recently held her mother's hand and recited a poem that Mrs. Stone had written 46 years earlier. The poem expressed Mrs. Stone's hope that her death would be instantaneous. But, Mrs. Gambrell said, "Alzheimer's disease is a long process of saying goodbye." ■

Caroline Gambrell and her mother, Jessie Stone, share a light moment.

Reaching out to Georgia's elderly

by Jeri Glick

Wilmer Thumma teaches from experience.

His pupils are third-year medical students from the Medical College of Georgia. His subject: old age.

At age 93, Mr. Thumma has a lot to teach. Through his actions and his words, he teaches the students to become better doctors for the elderly — to better understand the hardships, the pains and the fears of old age.

"I really can't tell them (the students) what the good Lord has done to give me this life. But I think if they study what I tell them here, they'll learn a lot," Mr. Thumma said as he sat in a brown vinyl chair in the living room of his home in Moultrie, Ga., a town of 17,000 near the Florida border.

"I try to tell them how I feel. Yesterday I was miserable. My mind was gone. I think I might be better now, but I've had one or two days that were rough."

This spring, MCG medical student James Bruce Cook sat on a chair next to Mr. Thumma — learning and healing.

Mr. Cook couldn't help but learn about the hardships as he spoke in a loud voice so Mr. Thumma could hear him, as he examined an infected cyst on Mr. Thumma's back and as he was told that the blanket covering Mr. Thumma's legs was there to help alleviate the pain of arthritis. Other topics came up, too: problems with drug interactions, dizzy spells and Mr. Thumma's lost sense of taste.

Mr. Thumma is just one of the many elderly patients throughout the state seen by MCG medical students during their four-week family medicine clerkships. And he is just one of the many senior citizens involved in MCG programs for the elderly in Georgia.

Each year, 180 students go through the family medicine clerkships. In Georgia, clerkship teaching sites are in Moultrie, Warrenton, Columbus, Savannah, Jesup, Villa Rica, Augusta and Fort Gordon. In South Carolina, a teaching site is offered through a medical clinic in Edgefield.

In addition to the clerkships, denture labeling services, a telephone reassurance program, wellness and fitness clinics, and other activities tailored to the elderly's special needs are offered through MCG.

Here is a summary of the programs:

• The School of Dentistry and the School of Allied Health Sciences have teamed up to offer denture-labeling services to nursing home residents.

The service — in which a person's dentures are labeled with his name — addresses a major problem in nursing homes.

Often residents leave their dentures in their pillow cases at night so they will be easily accessible. Then when the linens are changed in the morning, the dentures are lost in the laundry, said Dr. J. Earl Williams, chairman of community dentistry at MCG.

"They (the residents) are so sensitive about what belongs to them because they've lost so much — their homes, their belongings and even family members," Dr. Williams said. "Then they have periods of lapsed memory and they lose their dentures. It's very upsetting to them. They wonder if anything's sacred. Even their teeth are taken away from them."

Each year, 16 to 18 faculty members, 50 to 60 third-year dentistry students and about six students in the School of Allied Health Sciences' dental laboratory technology program go to a nursing home in Richmond or Columbia county. The dentistry students, under faculty supervision, screen patients for problems such as pain, infection or lesions, Dr. Williams said.

"We tell the nursing home staff of residents' needs so they can tell the residents' families," he said. "If residents do not have the money to make repairs, we contact the local health department to find a solution."

Meanwhile, dental technology students clean, label and polish the dentures in makeshift laboratories.

Bill Williams, program director of the School of Allied Health Sciences' Dental Laboratory Technology Program, also takes first- and second-year students in his program to nursing homes outside the Augusta area. In November, they went to a Union Point nursing home and labeled dentures for about 50 patients.

"We can go anywhere in the state as long as we have a local dentist to work with us and examine the patients," Mr. Williams said.

The students bring equipment with them and usually set up a laboratory in the lounge or beauty parlor of the nursing home. Then they clean and label the dentures, while the supervising dentist examines the patients and fits and checks the dentures after labeling.

• Second-year baccalaureate students in Allied Health Sciences' dental hygiene program also are working with the elderly in nursing homes.

The students provide educational programs for the staff and residents, perform oral exams under the supervision of a dentist or oral pathologist, consult with the staff and clean patients' partials and dentures, said Gail Winkley, associate professor in the Department of Associated Dental Sciences.

With the staff, students discuss dental caries, periodontal disease, the importance of proper dental hygiene and nutrition, and how to provide dental care to residents. They also determine the ability of each resident to care for himself, and they work with residents and staff to en-

James Bruce Cook looks at pictures with Wilmer Thumma at Mr. Thumma's home. ▶

MCG nursing student Sandra McKinney examines Michael Kelly as part of a Richmond County wellness program.

sure that residents are getting the proper level of dental care, Mrs. Winkley said.

The program, offered in conjunction with the Georgia Department of Human Resources, reaches 100 to 150 nursing home residents during each site visit. Since 1979, the students have gone to nursing homes in Burke, Washington, Emanuel, Wilkes, Lincoln, McDuffie, Screven and Richmond counties, she said.

• MCG nursing faculty and students are offering wellness programs in Athens and Richmond County that focus on health education, screening and counseling.

The programs, which eventually are expected to be offered in Columbia County as well, cover the importance of proper health care, nutrition, exercise, regular medical checkups and injury prevention. In addition, they include discussions on normal changes in the aging body, the importance of taking medications as prescribed, problems with drug and drug-food interactions and how to cope with chronic disease, said Dr. Patricia Hoff, associate professor of community nursing at MCG.

Health assessments include blood pressure screening, heart and lung assessments, blood sugar testing and monitoring of patients with known chronic diseases, Dr. Hoff said.

People in need of social or economic assistance are referred to the appropriate agencies, and those with medical problems are referred to physicians, she said. The program has been offered in Athens for three years and in Richmond County for about five years.

"Our primary goal is to alleviate the threats to the independent lifestyle," said Twilla Haynes, instructor of community nursing at MCG and a certified gerontological nurse practitioner. "This program helps cut down on hospital visits and health care costs."

In Gwinnett County, Mrs. Haynes also leads a weekly clinic for the elderly at an area drug store. The clinic includes educational programs on diabetes and hypertension, as well as blood pressure screening, she said.

• Marian Lancaster Conway, instructor of community nursing at MCG, worked with a women's church group in Millen, Ga., earlier this year to set up a telephone reassurance program for elderly individuals who live alone or are in poor health.

The program — which organizers hope to expand throughout Jenkins

Kim Stabell (left) and Margaret Lammers examine Eleanor Edwards at Jennings Health Care Inc. in Richmond County. The nursing home is one of many in Georgia that second-year dental hygiene students have visited since 1979.

County by working with local law enforcement and health agencies — assures that someone maintains contact with program participants daily, Mrs. Conway said.

A phone call is made to each participant at the same time each day. If the caller receives no answer after an hour, he contacts designated indviduals to check on the participant. If those individuals are unavailable, the county sheriff checks on them, she said.

Organizers decided to develop the program after an elderly woman in the rural Georgia community was alone for one-and-a-half days before anyone found out that she had had a stroke, Mrs. Conway said.

Also in Jenkins County, Mrs. Conway teaches health education and wellness classes to senior citizens upon request. The classes emphasize how to manage common health problems such as high blood pressure and diabetes, cope with stress, reduce risk factors for common ailments and develop healthy nutritional habits and lifestyles, Mrs. Conway said.

• Fitness programs, nutrition and safety in the home have been the focus of Dr. Bella J. May's work with the elderly over the last several years.

The professor of physical therapy in MCG's School of Allied Health Sciences has gone to a weeklong camp in North Carolina for the last two years to teach programs to people age 55 and older. Part of the time is spent discussing wellness programs, nutrition, stress management and how to exercise safely, and part is spent actually exercising.

Dr. May encourages participants — who attend from across the country, including Georgia — to assume responsibility for their own exercise programs, understand their physical limitations, recognize when they are exercising improperly and set their own activity goals.

"Many people believe that since they've been sedentary all their lives, they can't start exercising at age 55 or 60. But that's not true," she said. "Even if a person is wheelchair-bound, there are many exercises that can be done. But they must be geared to that person's ability."

Dr. May also has worked with more than 150 senior citizens in daylong programs in Georgia. In these she emphasizes how to start and structure a fitness program, and what the program should — and should not — entail. ■

A home for war heroes

by Sally Simkins

"Honey, your hair is made to primp and curl
While your cheeks were made to blush.
Your eyes were made to shine like stars and
Your lips were made to kiss."

William Long

These words were written by a young man at a class party in 1910.

This day he recites the words again, and his eyes take on a sparkle. But this day, he reads them to a visitor at the Georgia War Veterans Nursing Home.

William Long's been a patient at the nursing home in Augusta since 1982. A year earlier he had suffered a stroke, and soon after that he lost a leg to gangrene. He then decided he wanted to spend his patient days at Georgia War.

He likes to tell stories about his wife whom he met at a dance in Indianapolis and about how he used to love to braid her hair. She died in 1981, just after he had the stroke and five years shy of their 50th wedding anniversary. He cries easily, particularly when he talks about her.

Mr. Long is one of 177 men and women living at the nursing home operated by the Medical College of Georgia for the Georgia Veterans Service. The facility provides long-term care for chronically ill Georgia veterans who served during war times. Mr. Long served in World War I, World War II and the Korean War.

Patients can stay at the nursing home for any length of time. Some stay for months; others stay for years. Statistically, it averages out to 369.55 days per patient.

"We strive to have the patients reach their maximum potential so they can return home and function in the community," said Charles Esposito, administrator. "But there are many who will never be able to return home."

The home's $5 million operating budget is funded by the Georgia Department of Veterans Services, and the patients stay at no cost, Mr. Esposito said.

Residents wait one to eight months to be admitted into the nursing home, depending on the level of care they need. The waiting list is divided into four categories, from those needing intense nursing home care to those needing skilled care to a lesser degree.

"We try to keep a balance among all four catagories, but nursing homes in general are seeing sicker patients," Mr. Esposito said. "We are no exception."

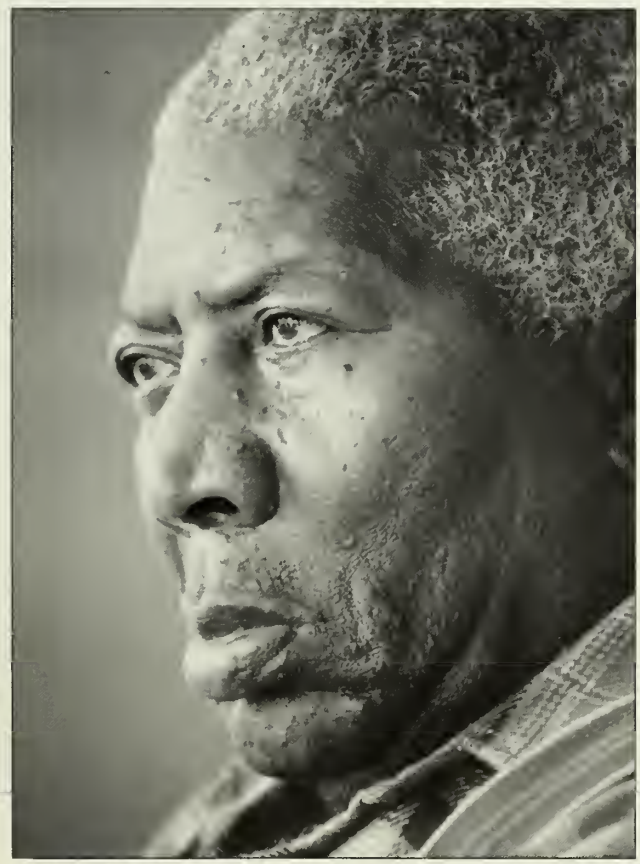
Patients range in age from 30 to 96. Many of the younger ones, primarily veterans of the Vietnam War, have spinal cord injuries. Some have progressed to the point that they do not

cont'd on p. 24

Stanley Crawford, 69, makes ice cream.

Paul Rhodaback, a younger patient at Georgia War.

William Long, 90, looks at a picture of himself and his wife that was made into a plate.



Andrew W. Young, 76.

Occupational therapist Karen Greenleaf works with Merrell Cheek.

need hospitalization but are not yet ready to be on their own.

A staff of physical therapists, occupational therapists, social workers, nurses and physicians works with the patients at Georgia War. In addition, the nursing home has a full-time medical director and a part-time assistant.

Georgia War's affiliation with MCG gives it an advantage over nursing homes in the private sector, said Mr. Esposito, who came from a private nursing home. "Outside resources aren't across the street for them like they are here. And I don't know of a private facility that has an in-house medical director and part-time assistant," he said.

"Also, our patients are seen by MCG residents and physicians through MCG's Family Practice Center. We have very good physician services' support. We also have the benefits of the Veterans Administration Medical Center and pharmacy services from MCG Hospital."

Volunteers also add to the patients' lives. They come from veterans' organizations, churches and individuals wanting to give of their time and talents. One such volunteer, 73-year-old Lois Brannon, is celebrating her 16th year of service to the home and its residents.

"When you go out and help people, you end up helping yourself," she said. She has even gotten her church involved, but she still performs hundreds of hours of service on her own.

On Wednesday mornings the first floor of the nursing home is filled with the sounds of her singing and piano playing. Not all of the patients are able to sing any longer, but it's easy to tell they remember from the looks on their faces and the tapping of their fingers on the arms of the wheelchairs.

"Music brightens their days and gives them something to look forward to," Mrs. Brannon said. "And by doing this, it gives me something to look forward to."

Mrs. Brannon also helps feed the patients daily. And she is there just to talk. "They often just need someone to share their life with."

Programs led by the staff include reality orientation and reminiscence patient groups. In the reality groups, discussion centers on current events; in the reminiscence sessions, memories. There are stories of first jobs, war experiences, families, children.

The current events sessions help keep the patients oriented to today and the world about them. "We don't want them to become so introverted that they don't care what is going on in the world," Mr. Esposito said.

There also are bus rides, picnics and fishing trips.

"They always say they're going to catch enough fish for dinner but they're not disappointed if they don't. They just buy some on the way back," he said.

A 10-member patient council assures that the patients' wants and desires are made known.

A case in point is the enclosed courtyard in front of the nursing home. The front lawn, once sloping and not really conducive to patient use, has been leveled and walled. A garden and gazebo are to be added. The wall was to be solid across the front, but patients who enjoyed watching activity on 15th Street and across at MCG Hospital objected.

"They said the wall would close them in and they had a good point," Mr. Esposito said. "This is something we had not thought of so we lowered the wall and added wrought iron instead.

"Many patients enjoy sitting on the porch and watching. During construction of the MCG parking deck they could tell you who was working and doing his job and who was not from day to day."

Squirrels and birds also give pleasure to the porch crowd, and a box of seed is kept full for them.

"A couple of squirrels are looking for me all the time," said Stanley Crawford, an automobile accident victim from Augusta and a veteran of World War II, the Korean War and Vietnam. "They know they're going to get something and aren't a bit afraid. They almost come sit right there in front of me."

At age 68, Mr. Crawford, who's looking forward to more wheelchair "rolling" room once the courtyard project is completed, said he feels young and good. "You don't get old 'til you're 90," he said. ■

Georgia War residents share memories during a reminiscence meeting on the porch.

Research update

Researchers at the Medical College of Georgia are tackling health related questions, problems and issues that have gained prominence as the nation's elderly have surged in number.

The research has implications for all Americans, and particularly for those living in Georgia. In Georgia, the 75-and-older age group is doubling at twice the rate of the population less than age 60, while the 60-to-74 age group is increasing one-and-a-half times faster, according to Dr. Albert A. Carr, professor and chief of the Section of Hypertension at MCG.

These elderly individuals represent 13.8 percent of the total population, yet they consume 40 percent of the health care resources, Dr. Carr said. Research into medical, psychological and social factors affecting the elderly may help to improve the health and quality of life of this group while reducing the strain on health care resources.

MCG researchers are conducting their studies at MCG, several sites off campus and at the Georgia War Veterans Nursing Home and the Veterans Administration Medical Center in Augusta, which are operated by MCG.

Here is a summary of the research:

• Psychiatric problems in the elderly have been under study for the last five years by researchers in the Department of Psychiatry and Health Behavior at MCG and at the VA Medical Center.

A common finding has been that the elderly do rather well relative to other age groups. On the whole, elderly patients have less severe psychological symptoms and tend to experience problems in distinct ways. Older people also seem to experience a good quality of life compared to other points in their lives and compared to younger people, said Dr. Leon A. Hyer, of the psychiatry and health behavior department and the VA.

Current research is focusing on the influences of cognitive decline, background factors, treatment expectations and personality on various psychiatric symptoms and on treatment potential.

• Cellular aging, cataract formation and fat metabolism in the elderly are under study in the Department of Cell and Molecular Biology.

Dr. Peter J. Hornsby and his collaborators are studying cellular and molecular mechanisms of aging.

They have found that the cell's metabolism fails to work as it should after it has been grown for long periods in tissue culture, or when it has grown for long periods by repeated transplantation. Ultimately, finding out exactly what has happened to such cells might enable researchers to extend the human life span.

A more realistic and immediate goal, however, is to use the information to gain insight into some of the diseases affecting the elderly, such as Alzheimer's disease, Parkinson's disease, adult-onset diabetes and atherosclerosis. Cellular aging may act with other environmental or genetic factors to cause these diseases, Dr. Hornsby said.

Understanding cellular aging also is critical to understanding the nature of cancer, he said. When a cancer-causing agent acts on a normal cell, or when a tumor-causing virus infects a normal cell, genes are activated that allow the cell to avoid cellular aging. Dr. Hornsby and his colleagues are studying how these genes enable cells to escape aging, which should help to explain the cellular aging process and the formation of a cancer cell from a normal cell, he said.

• Dr. E.C. Abraham and his colleagues are exploring how cataracts form in old age and in diabetics.

The researchers, who hope to find a way to delay or prevent cataract formation, are examining changes in protein structure in the lens as cataracts form.

The researchers also are testing two drugs — namely tolrestat and sorbinil — to find ways to prevent the development of cataracts. In addition, they are trying to find out whether the development of cataracts can be delayed or inhibited by increasing the quantity of a sugar com-

Dr. Peter Hornsby removes cells from liquid nitrogen.

pound found in the lens tissue.

• Drs. A. Lee Carter and A. Henry Chuang, along with Dr. Allen Costoff of the Department of Endocrinology, are examining a key factor in the regulation and utilization of fat.

The factor, a complex molecule called carnitine, has implications for the elderly because Americans often gain weight with age, principally by storing a type of fat called triglycerides.

The researchers are trying to determine how much carnitine is required in the molecular regulation and utilization of triglycerides,and they are identifying factors that help control the amount of carnitine synthesized by the body. Experiments so far indicate that older animals of both sexes excrete larger quantities of carnitine into urine than do younger animals so the older animals need more carnitine from dietary sources or through synthesis.

Older people who eat few meats or meat products may have a decreased dietary intake of carnitine. Combined with increased loss of carnitine in the urine, they may be unable to convert fat to energy adequately, Dr. Carter said.

• The Social Work Department of Georgia War Veterans Nursing Home has begun to survey patients, their families and facility staff to determine whether they support mixing cognitively well and cognitively impaired patients.

Cognitively well patients are able to make their own decisions, while cognitively impaired patients cannot.

Preliminary study results indicate patients or their responsible parties prefer to have specialized units addressing the unique needs of the cognitively impaired, said Eugene R. Glowny, director of social work at Georgia War. Results of the one-year study will be used for planning future patient care at the nursing home.

• Dr. Nancy Stead, of the Department of Medicine, is exploring why many elderly individuals develop anemia without any apparent cause.

Normally, a low red blood cell count is an important indicator of disease. Yet one-third of anemic elderly have low red blood cell counts but don't have illnesses known to cause anemia. They also have no related iron or vitamin deficiencies and no blood or bone marrow abnormalities. This condition is called anemia of senescence.

Dr. Nancy W. Stead

Substances in mature white blood cells called growth factors are needed to stimulate red blood cell formation. Dr. Stead has found that growth factors from middle-aged people, ages 20 to 45, more effectively stimulate red blood cell formation than those from older individuals ages 74 to 90. Her studies indicate that that defective white cell growth factors contribute to anemia in the elderly.

• Drs. Robert J. Adams and Fenwick T. Nichols III, of the Department of Neurology, and their colleagues are focusing their research on two areas: treatment of acute strokes; and stroke prevention by better characterization of risk factors.

Strokes, a significant cause of death and disability in the elderly, occur when blood flow to a part of the brain is inter-

rupted. Some areas of the threatened brain may be salvaged for several hours after the stroke occurs so research efforts have focused on restoration of blood flow.

MCG researchers are studying a medical therapy that involves a two-part approach: increasing the total blood volume to improve the flow of blood to the head; and reducing the concentration of red cells in the blood to reduce blood thickness. The therapy is based on the theory that reduced thickness allows more oxygen to be delivered to the threatened brain through very small feeding vessels.

MCG researchers, along with other medical centers nationwide, are testing a new drug called Pentastarch that increases total blood volume while reducing blood viscosity. Initial results indicate the procedure involves minimal risk. Effectiveness, however, cannot be determined until the 21 medical centers testing it analyze results, Dr. Adams said.

• Dr. Adams — in collaboration with Drs. Elaine B. Feldman and Richard Carroll, of the Georgia Institute of Human Nutrition and the Department of Medicine — also is looking for ways to prevent strokes.

The researchers are examining the connection between blood lipids and blood selenium content with the risk of having a stroke. Using these blood components, they hope to establish ways to predict who is at high risk for strokes so those people can be targeted for prevention programs.

• The health needs of the rural elderly have been under study by several researchers at MCG.

An interdisciplinary research team recently surveyed psychological, social and medical needs of 94 people over age 55 from Hephzibah, Ga.

The team found that health care was available in neighboring communities, but some survey participants had difficulty obtaining those services. Most participants said they were satisfied with their lives, able to get as much exercise as they liked and able to care for themselves. But many survey participants said they had difficulty with such tasks as heavy housecleaning.

Survey responses were used to plan and offer four workshops designed to improve health education in Hephzibah.

Dr. Virginia R. Allen, Department of Occupational Therapy, and Dr. Max D. Miller, Department of Family Medicine, recently presented the research.

• Another MCG research team has examined the nutritional status of rural and urban elderly.

The researchers found that caloric intake in urban and rual elderly was below recommended daily allowances, especially among black women in rural areas. In addition, rural black women were more likely to be at risk for protein-calorie malnutrition. The rural elderly also consumed significantly less iron than the urban group.

Calcium intake was below the recommended daily allowance for all groups studied. The finding was particularly important since the elderly often suffer from osteoporosis and inadequate calcium absorption.

The research team consisted of Drs. Mason P. Thompson, Patrick F. Mongan and Max D. Miller, and Ms. Debbie Creten, of the Department of Family Medicine and the Tri County Clinic in Warrenton, Ga.

• In another recent study, health needs of older women in rural Georgia were examined.

Researcher Marian Lancaster Conway, of the Department of Community Nursing, surveyed the health needs of women 65 and older and described demographic and sociologic variables related to these needs.

She found that most survey participants were healthy, though white participants tended to be healthier than black participants. Women who were ill, however, were likely to have unmet health and service needs because many lived alone. In addition, the potential for accidental misuse of medications was relatively high because of the number of medications taken.

The study indicated a need for services that would promote and maintain the health of this population, such as health screening and health education.

• Dr. R. Leon Longe, of the Departments of Pharmacology and Toxicology and Family Medicine, is examining interactions between medicines taken by the elderly and interactions between medicines and dietary supplements.

People over age 65 consume about 14 different drugs a year, double the number consumed by younger adults. These drugs can interact, affecting the action of one another. Sometimes serious effects occur.

In addition to drug-drug interactions, drugs may interact with foods. Nutritional dietary supplements often are purchased by the elderly, but knowledge of the effects of interactions between such supplements and medications is limited.

• Dr. Betty H. Hamm, of the Department of Mental Health/Psychiatric Nursing, Dr. Barbara Fuszard, of the Department of Nursing Administration, and researchers from Georgia State University and Louisiana State University Medical Center, will begin a four-year study in September on the relationship of selected group activities to the self-esteem of non-hospitalized men and women over age 60. Forty-eight subjects will be involved in the study each year.

The subjects will be divided into four groups. Two treatment groups will be taught assertiveness training techniques one hour per week for 12 months, and two control groups will meet for unplanned and unstructured activities for one hour a week for 12 months.

The researchers hypothesize that the treatment groups will demonstrate an increased level of assertiveness and self-esteem. Previous research efforts in this area have been undertaken primarily with youthful populations.

• The Ambulatory Geriatric Care Program at MCG is undertaking research projects aimed at meeting the needs of ambulatory elderly patients.

Researchers have assembled a comprehensive data base with information on patients' past medical histories, social histories, family support systems, economic factors, as well as a depression index and mental status examination to screen for early thought disorders, said Dr. Richard E. Melcher, program medical director.

They now are examining curriculum development and its impact on student and resident attitudes toward the elderly. Working with the Gerontology Center in Athens, Ga., the researchers also are studying prescription errors, developing labeling and instruction changes to minimize medication errors and examining the effects of numerous medications on mental well-being and long-term survival.

The researchers plan to explore the concept that food supplements, vitamins, adequate levels of physical activity and avoidance of potential health hazards lead to longer and healthier lives. And they will study the attitudes of the elderly toward death and dying, and the consequent effect on their responses to stress and illness, Dr. Melcher said.

• Drs. Mason P. Thompson and John Edelsberg, of the Department of Family Medicine, have been examining involuntary weight loss in the elderly.

The problem of unexplained weight loss in the elderly is a common and difficult diagnostic problem for physicians, Dr. Thompson said. Marked weight loss generally is accepted by physicians as a sign of serious disease, most often cancer or an infection. But insufficient information is available on how to approach the problem, he said.

The MCG researchers are examining four questions in particular: how are these patients being approached diagnostically; which tests yield a lot of information; what are the leading causes of involuntary weight loss; and what is the eventual outcome of the patients? Particular attention also will be given to nutritional and other treatment plans. Patients over age 65 who have lost 7.5 percent or more of their weight in the previous six months will be examined in the two-year study.

• Dr. Patricia S. Hoff, of the Department of Community Nursing, recently examined the effects of an educational program on the anxiety older adults experience over the possibility of being institutionalized.

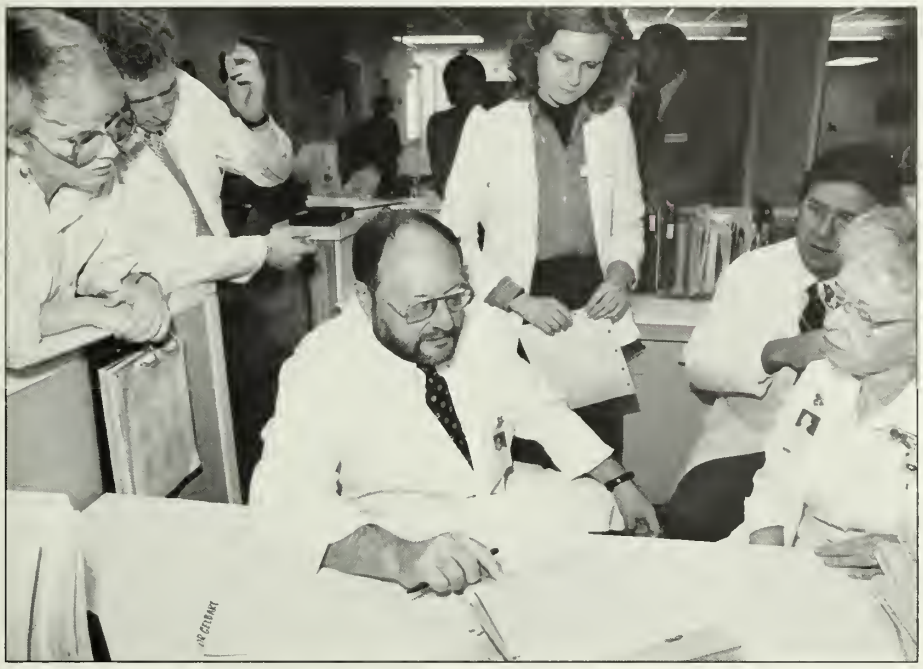
Dr. Hoff's study suggests that educational programs for older adults still living in the community can lower the anxiety they feel over nursing home institutionalization. An educational program was particularly effective with older persons living in independent housing and slightly less effective with those living in congregate housing.

Dr. Gloria Clayton talks with nursing home residents.

• Drs. Sarah H. Gueldner and Gloria M. Clayton of the Department of Nursing, collaborating with Rosie W. Messer and Virginia Carlisle, have been studying elderly abuse.

Abuse and neglect of the elderly by family members, especially by the adult children who provide care, is a growing national health problem. About 4 percent of the nation's elderly may be victims of some type of abuse and neglect, ranging from moderate to severe in nature. Meanwhile, cases of abuse often go unreported.

Emergency room nurses in two hospitals in southeast Georgia were found to under-report suspected cases of abuse and neglect. The study indicated one or



Dr. Arthur O. Gelbart (center) consults with (left to right) Deborah Fountain, Ben Sellars, Kay Jarvis, Dr. R. Leon Longe and Mrs. O. Durham while on rounds at Georgia War.

more factors may influence nurses' reporting practices. Future research will focus on factors contributing to abuse of the elderly and ways of stopping the abuse.

• High blood pressure, a problem that affects more than 50 percent of the U.S. population over age 55, has been under study by several MCG researchers.

Dr. Jacques Pye, of the Department of Family Medicine, and his colleagues in family medicine and in the Section of Hypertension are examining the ways physicians diagnose and manage patients with high blood pressure.

They began by examining physician compliance with current national recommendations for the diagnosis and management of the disorder, a study that had not previously been performed. The researchers will search next for additional methods of evaluating patients and better educating physicians in proper evaluation of high blood pressure. In addition, they will examine how doctors manage patients with the disease.

• In another study, researchers in MCG's Hypertension Section are examining the effect of increased blood pressure on heart function and enlargement.

Recently the researchers, including Drs. Albert A. Carr and L. Michael Prisant, participated in a multicenter study on the effect of an experimental drug called ketanserin on blood pressure control and heart function.

The research has special implications for the elderly because high blood pressure is most common in this group. In addition, the condition is one of the leading causes of disability in the elderly, the most common reason for visits to primary care physicians and the most frequent reason medications are prescribed, Dr. Carr said.

Elderly individuals with high blood pressure present special treatment problems as well. These are related to brain and heart function, as well as to limited access to care and financial resources to purchase blood pressure medications, he said.

• A research team from the Department of Pharmacology and Toxicology is seeking to bring relief to arthritis victims, many of whom are elderly.

Certain chemical agents released by the body are involved in the swelling and pain associated with arthritis. One of the agents, T-kinin, circulates in the blood in the form of a protein known as T-kininogen.

Dr. Lowell M. Greenbaum, vice president for research and dean of the School of Graduate Studies, and Drs. Hiroshi Okamoto, Aydin Barlas and Kuzuo Surgio are credited with recognizing the importance of T-kininogen and suggesting how T-kinin may be released into the body, possibly causing the inflammation and pain associated with arthritis.

• Dr. Arthur O. Gelbart, of the Department of Family Medicine and medical director of the Georgia War Veterans Nursing Home, and his research team are conducting studies on the care and management of elderly patients.

In various studies, researchers are trying to determine the best methods of teaching geriatric care to medical students and residents; examining the best ways of diagnosing, treating and managing patients with such problems as dementia and Parkinson's disease; and studying the heart medicine digoxin to determine how much is needed by people with different body weights and physiological characteristics.

Researchers also are studying ways of improving communications between pharmacists, physicians and other members of the health care team to eliminate errors in dispensing drugs; examining the nutritional needs of the elderly at different ages and states of health; and looking into whether tests for tuberculosis are inaccurate in malnourished elderly patients. In addition, the research group — which includes Drs. Max Miller, Richard Melcher and Leon Longe — is examining how multiple drugs affect the elderly and how to treat pressure sores.

• Dr. Allen Costoff, of the Department of Endocrinology, has been studying changes that occur in the pituitary gland and ovaries during the aging process.

The pituitary gland secretes hormones that control the reproductive cycle. In rats, Dr. Costoff has found that the length of the reproductive cycle increases with age. This change is followed by irregular cycles and then an ending of the cycle entirely.

A hormone called follicle-stimulating hormone increases in aging rats, while luteinizing hormone, which causes ovulation, is greatly reduced. A hormone called prolactin, usually found in nursing females, also increases in aging rats. In humans, the prolactin seems to counter the effects of the luteinizing and follicle-stimulating hormones, causing premenopausal women to miss cycles and have irregular cycles. ■

MCG in the News

R. Edward Howell

by Toni Baker

R. Edward Howell was a 25-year-old Ohio high school science teacher and coach when he went soul searching.

"I woke up one morning to find out that today was much like yesterday, tomorrow would be the same and wondered if I wanted to spend the next 40 years doing it all."

His search uncovered a need to search.

He looked no farther than next door.

His neighbor was a hospital administrator. Mr. Howell decided to spend his Christmas vacation following that neighbor around.

Twelve years later, Mr. Howell is doing the leading.

He's the new executive director of the Medical College of Georgia Hospital and Clinics.

Is he aggressive? "Probably."

Is he competitive? "Probably."

Is he excited about his new job? Definitely.

And he's got good feelings about where he has been.

Mr. Howell has spent the bulk of his professional career at the University of Minnesota Hospitals and Clinics where he rose to the rank of associate director just two years after completing his administrative fellowship there.

"I think I'm fortunate in leaving a place where I have nothing but good things to say about the people, about the place, about my experiences."

But it was time for a change.

"It's time for new challenges, new environments, getting to know good people once again."

Perhaps it takes a second listen to detect the rhythm of Mr. Howell's transformation from science teacher to administrator of academic medical centers. The common notes are education, science and people.

"It's best to understand my family, (who were) all educators. My father was superintendent of schools in Ohio. My mother was an educator. Everybody in my family was an educator," Mr. Howell said.

He bucked a few trends and was considered a little strange back in the days when he actually spent time in the classroom teaching science — pretty odd behavior for a track and football coach.

Science touched — and touches — something in him probably because of the disciplined thinking. He still finds that scientific way of thinking, going out and collecting facts and testing conclusions, works for him as he runs hospitals instead of laboratories.

The idea of being a pure scientist didn't grab him. The isolation with one's thoughts and work was not something with which he was totally comfortable. "A pure scientist doesn't deal with people that much. I like people."

So it wasn't a great surprise that Mr. Howell took naturally to his master's in hospital and health services administration at Ohio State University.

What did surprise him was that he also found himself at home with the business and financial side of running a hospital.

As the three-year program in hospital administration unfolded, Mr. Howell's interest and enthusiasm for his new-found career soared.

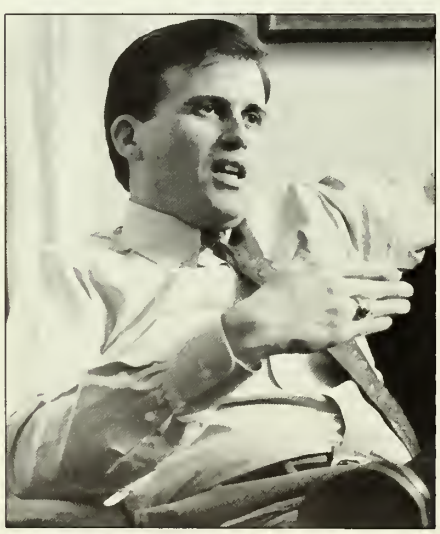
It turned out that the Christmas vacation he followed his neighbor was time well spent.

The years since have not dulled his enthusiasm.

Now, as the 37-year-old Mr. Howell takes on the leadership of MCG Hospital and Clinics, he does so because of the people and opportunities at Georgia's health sciences university.

He feels all the pieces are right — the people, the enthusiasm, the timing and the place.

He doesn't want to talk at this point about specific needs of the institution;



R. Edward Howell discusses his philosophy of hospital management.

Mr. Howell recognizes the fact that he's just begun to learn MCG.

"It takes some time to understand. It takes some time to learn. Hopefully I can do that as rapidly as possible."

He plans to augment the learning process by visiting with people before he actually assumes his duties in May.

While averse to talking about the specifics of what he plans to do, Mr. Howell shares some general ideas about areas that may need his attention early on.

"MCG has a tremendous opportunity to pull together the medical staff, the hospital and the education of students into a concerted effort. This is not an opportunity that exists everywhere," he said.

"To do that will require focusing on what it is that needs to be done, coming to an agreement and pulling all together in that direction.

"Academic medical centers that have been successful and risen to prominence, and probably all of those that will survive, have achieved a reasonable balance between . . . (the) things that they do very, very well and (the things) that they do well and are required (to do in order) to provide reasonable education for the student."

The affable young administrator also shares something of his management philosophy.

"I guess my style is that I get out and about a lot. I think there's an awful lot of learning that can be done by seeing and talking and feeling and (doing) those kinds of things that aren't necessarily included in a report. I do that and I expect that I'm not just there as a casual observer. I'm there as a participant. If I see things that are good, I comment on them and participate in them. If I see things I'm particularly concerned about, I also do the same. I know that may not always be necessarily accepted or well responded to, but I do that and that shouldn't be a surprise to people here because that is what they will see. I don't spend the (bulk) of my time doing that, as you might guess, but it will be done and not just at one o'clock in the afternoon."

Yes, he says, he's an approachable administrator. "But I'm also fairly direct. I expect people to have done their homework if they expect me to make reasonable decisions. If the input isn't there, if the information isn't gathered, if their recommendations haven't been well thought out, then I'll challenge someone. If I feel I need more input, I'll bring in input from others."

He says that in a complex academic center, there are not many one-person or one-group issues. That, Mr. Howell says, means participative decision making "underline decision making. The intent there is a process and expected outcome." That doesn't mean Mr. Howell won't make a decision alone if he needs to for reasons of time, or if the decision is one of those that does involve a single constituency or if the issue is simply his business alone.

And he can be directive. When people aren't doing what they should, there are several possible explanations — they don't know what to do, they aren't capable of doing it or they simply choose not to do it, Mr. Howell said.

Perhaps one of the best ways to tell which reason is the correct one is to first make sure it is clear what is to be done. Second, to have the employer and employee agree that there are reasonable resources available to get that job done. And third, to set timetables for achievement.

"In doing so, you also set consequences of achieving and not achieving," Mr. Howell said. People know in advance what the consequences will be one way or the other. "I believe while that may not be humanitarian, it is fair, it is consistent and it is usually the way I do it." ■

MCG in the News

Dr. Gary M. Whitford

by John Donnelly

Fluoride research was part of the package deal Dr. Gary M. Whitford got when he selected his graduate school adviser.

"As a graduate student at the University of Rochester, I selected as my adviser Dr. Donald Taves, who was very prominent in fluoride research," Dr. Whitford said. "I knew of Taves and knew he was the type of man I wanted to work with. I got into fluoride research by selecting the man, not the subject."

But the research topic proved to be quite a bonanza.

Dr. Whitford's tireless efforts in the study of fluoride metabolism and toxicity have earned him top professional honors. And on June 26, the Regents professor of oral biology, associate professor of physiology and member of the graduate faculty at MCG will be honored again. He will receive the 1986 H. Trendley Dean Memorial Award from the International Association for Dental Research. The presentation will be made in The Hague, The Netherlands, at the opening session of the association's 64th general session.

The nominating committee, made up of past recipients of the award, selected Dr. Whitford for his continuing research into fluoride metabolism and toxicity. Trendley Dean, for whom the award is named, led the research team that uncovered the dental implications of fluoride in drinking water in the 1930s and 40s.

Since he came to MCG 14 years ago, Dr. Whitford has focused his research on how fluoride is used by the body and the optimal concentrations of fluoride in the body. "The major thing that we wanted to do was to clarify how the body absorbs, distributes and excretes fluoride," he said. Most of his early studies examined the way the kidney normally handles fluoride.

"We found that the pH level of the urine was an important factor in determining how rapidly the kidneys excreted fluoride. The more acidic the urine, the less efficiently was fluoride excreted. Conversely, the more alkaline the urine, the more efficient was the excretion," Dr. Whitford said.

Researchers have known for years that diet composition plays a major role in determining how acidic the urine is, and therefore, how much fluoride the body retains. This means that foods, such as red meats, that produce relatively large amounts of acid in the body cause fluoride to be retained more efficiently so that more fluoride is available to the

body fluids and added to tooth enamel.

With this information, Dr. Whitford began studying the normal distribution of fluoride in the body's cells. "This distribution can be explained in terms of the magnitude of the pH gradient across the cell membrane," he said. "We designed experiments that showed we could protect animals from toxic amounts of fluoride by changing the pH gradient. We found that by adjusting the pH gradient, we could cause fluoride to move into or out of cell membranes."

Dr. Whitford also is studying changes in fluoride metabolism with age. "Fluoride is a bone seeker. It accumulates in calcified tissues," he said. "We are studying the factors that determine how quickly fluoride is removed from the blood stream by these tissues. Early results from studies with laboratory animals have shown the rate of removal is a function of age. The rate of fluoride removal by the bones is much faster in younger animals than in older ones."

In the younger animals, fluoride uptake by calcified tissues accounts almost entirely for the removal of fluoride from the blood stream. In older subjects, the rate of removal slows. Age appears to have a minor effect, however, on the clearance rate of fluoride by the kidney, Dr. Whitford and his colleagues have found.

"This is important when determining the amount of fluoride with which to supplement a person's diet," Dr. Whitford said. "Now we can use the data from our metabolism studies to more precisely determine the amounts needed for dietary supplements of fluoride."

Fluoride supplements come in the form of tablets and drops, he said.

All of Dr. Whitford's research is done "with an eye toward maximizing the beneficial effects of fluoride while minimizing any harmful effects," he said.

But it is not for research alone that the H. Trendley Dean award is given. Dr. Whitford has contributed to the dental scientific community in other areas as well. He has served as a consultant and adviser to the American Dental Association, the Centers for Disease Control, the World Health Organization and the National Institute for Dental Research.

He also has been monitoring water fluoride levels in Georgia for the last two years in conjunction with the Georgia Dental Association, the Medical Association of Georgia and the Georgia Department of Human Resources. "This program allows dental and medical personnel to submit water samples to our laboratory so we can determine the level of fluoride," Dr. Whitford said. "From the test results, the dentist can determine if the patient needs a fluoride supplement to the diet. Since the research we are doing has helped determine optimal fluoride levels, this program provides a practical application of what we have learned." ■

Dr. Gary Whitford works in his lab at MCG.

Giving. . .

Supporters of the Medical College of Georgia are encouraged to name MCG Foundation Inc. as the beneficiary of gifts in wills and other trust arrangements.

The Board of Regents of the University System of Georgia recently requested that individual colleges and universities within the system encourage their supporters to name tax-exempt foundations at particular schools as beneficiaries of such gifts. This procedure is expected to ease the administrative aspects of managing the gifts.

A gift made to any unit within the system is technically the property of the board of regents. The regents take official action to designate gifts for their intended purposes.

Officials at the Medical College of Georgia created MCG Foundation Inc. in 1954 to administer its gifts. If you have provided for the Medical College of Georgia in your will, please check with your attorney to ensure the Medical College of Georgia Foundation Inc. is properly named.

If you are now preparing your will and considering naming the Medical College as a beneficiary, feel free to contact our offices at (404)828-2515 for assistance. We can provide information on designating uses for the funds, honoring loved ones, receiving tax benefits or other aspects you and your attorney may discuss.

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